

INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 2005/000121

A. CLASSIFICATION OF SUBJECT MATTER

IPC7: F23D 14/06, F24C 3/08

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: F23D, F24C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-INTERNAL, WPI DATA, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|---|--|
| X | EP 0534301 A2 (MERLONI ELETTRODOMESTICI S.P.A.), 31 March 1993 (31.03.1993), column 3, line 55 - column 4, line 14; column 5, line 33 - line 57, figures 1-2 | 1-6,13, 15-21,29-32, 35-36,60-68 |
| A | -- | 9,37-53, 69-72 |
| X | US 2320754 A (A.G. SHERMAN), 1 June 1943 (01.06.1943), page 2, column 1, line 20 - line 22, figures 1-9 | 1-4,6-7,12, 29 |
| A | page 2, column 1, line 72 - line 75, figures 1,8 -- | 34,41-53 |

☒ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

3 May 2005

Date of mailing of the international search report

11-05-2005

Name and mailing address of the ISA/

Swedish Patent Office

Box 5055, S-102 42 STOCKHOLM

Facsimile No. +46 8 666 02 86

Authorized officer

Marianne Dickman / JA A

Telephone No. +46 8 782 25 00

INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 2005/000121

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|---|---|
| X | FR 2770620 A1 (SOURDILLON SOCIETE ANONYME), 7 May 1999 (07.05.1999), page 5, line 29 - page 6, line 7 -- | 1-3,5-6, 16-21,30,36, 60-68 |
| X | US 5842849 A (HUANG), 1 December 1998 (01.12.1998), column 2, line 14 - line 26; column 2, line 41 - line 54, figures 1-7 -- | 1-3,6,8-9, 12,15,18, 22-23,32, 35-36 |
| A | | 8-9,12, 22-23,26, 42-59 |
| X | FR 2650369 A1 (MERLONI ELETTRODOMESTICI S.P.A.), 1 February 1991 (01.02.1991), page 4, line 14 - line 26, figures 1-2 -- | 1,8-9 |
| X | US 6332460 B1 (PAESANI), 25 December 2001 (25.12.2001), column 2, line 61 - line 67, figure 1 -- | 1,10,22-24, 26,32,36-37, 39 |
| A | | 54-59 |
| X | US 5401164 A (YEN), 28 March 1995 (28.03.1995), column 3, line 1 - line 13, figures 2-3 -- | 37,29 |
| A | column 4, line 7 - line 35 | 22-28,54-59 |
| X | US 20020039713 A1 (DANE), 4 April 2002 (04.04.2002), page 2, column 2, line 1 - line 3, figures 1-7 -- | 1 |
| A | DE 435795 C (CARL KOCH), 29 December 1926 (29.12.1926), figures 1-2 -- | 1-72 |

INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 2005/000121

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|--|-----------------------|
| A | US 2100292 A (F.H. SCHNEIDER), 23 November 1937 (23.11.1937), page 1, line 31 - line 36, figures 1-2 -- | 42-53 |
| A | US 6244263 B1 (SCHLOSSER ET AL), 12 June 2001 (12.06.2001), column 7, line 14 - line 18; column 12, line 4 - line 18 -- | 54-59 |
| P,X | WO 2004044490 A1 (SABAF S.P.A.), 27 May 2004 (27.05.2004), page 11, line 16 - line 21; page 12, line 12 - line 29, figures 1-6 | 1,22,26 |
| P,A | -- | 42-72 |
| P,A | US 20040195399 A1 (MOLLA), 7 October 2004 (07.10.2004), paragraph (0042)-(0043), detail 6 -- ----- | 60-68 |

INTERNATIONAL SEARCH REPORT

International application No.
PCT/SE2005/000121

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

See Supplemental Box

1. ☒ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

Box III

Invention 1 - Claims 1-36 and 69-72: Relates to a gas burner including at least one distribution chamber intended to distribute air gas mixture to a plurality of flame ports. At least one injector is positioned to inject gas into said distribution chamber/s via a venturi formed by a vertically directed passage, a transition port, and at least one venturi extension extending away from said transition port.

Invention 2 - Claims 37-41: Relates to a manifold for a gas burner and defines a cavity made up of upper and lower relatively thin walls and a peripheral wall. At least one injector is mounted to the manifold to deliver air gas to a distribution means, and an inlet port allows supply of gas to pressurise said cavity.

Invention 3 - Claims 42-53 and 69-72: Relates to a gas burner having at least two discrete distribution chambers. Each chamber includes flame ports and a venture for supplying air gas mixture thereto. The ventures cooperate with a respective injector conducting gas from a single gas supply connection via a common manifold. Each distribution chamber includes radially, towards the centre of the burner, extending portions.

Invention 4 - Claims 54-59: Relates to a gas burner including a distributor having flame ports and at least two venturis. Each venturi cooperates with a respective injector located near to a wall portion provided with elongated, at their extremities narrowing, air inlet ports.

Invention 5 - Claims 60-68: Relates to a gas burner including distributor means with at least one chamber to distribute air gas mixture to flame ports. At least one injector is positioned to inject gas into said chamber/s via a respective vertically directed converging passage with a transition port. A venturi is formed by the converging passage, the transition port, and a venturi extension acting upon a generally horizontal flow of air gas mixture. Near the rim of the transition port two or more occluding structures are arranged to direct said air gas mixture to the flame ports.

INTERNATIONAL SEARCH REPORT
Information on patent family members

01/04/2005

International application No.
PCT/SE 2005/000121

| | | | | | | |
|----|-------------|----|------------|------|--------------|------------|
| EP | 0534301 | A2 | 31/03/1993 | DE | 69219711 D,T | 13/11/1997 |
| | | | | ES | 2103859 T | 01/10/1997 |
| | | | | IT | 1250838 B | 21/04/1995 |
| | | | | IT | T0910723 D | 00/00/0000 |
| US | 2320754 | A | 01/06/1943 | NONE | | |
| FR | 2770620 | A1 | 07/05/1999 | IT | 1303273 B | 06/11/2000 |
| | | | | IT | MI982320 D | 00/00/0000 |
| US | 5842849 | A | 01/12/1998 | NONE | | |
| FR | 2650369 | A1 | 01/02/1991 | IT | 1232887 B | 05/03/1992 |
| | | | | IT | 8967638 D | 00/00/0000 |
| US | 6332460 | B1 | 25/12/2001 | IT | 249886 Y | 09/06/2003 |
| | | | | IT | 1311777 B | 19/03/2002 |
| | | | | IT | VE990006 A,U | 31/07/2000 |
| US | 5401164 | A | 28/03/1995 | AU | 663419 B | 05/10/1995 |
| | | | | AU | 5078093 A | 08/06/1995 |
| | | | | GB | 2280743 A,B | 08/02/1995 |
| | | | | GB | 9316396 D | 00/00/0000 |
| | | | | SG | 45044 A | 19/12/1997 |
| US | 20020039713 | A1 | 04/04/2002 | CA | 2412117 A | 20/05/2004 |
| | | | | EP | 1195556 A | 10/04/2002 |
| | | | | FR | 2814795 A | 05/04/2002 |
| | | | | US | 6655954 B | 02/12/2003 |
| DE | 435795 | C | 29/12/1926 | NONE | | |
| US | 2100292 | A | 23/11/1937 | CA | 2085470 A | 27/12/1991 |
| | | | | JP | 6503972 T | 12/05/1994 |
| US | 6244263 | B1 | 12/06/2001 | US | 6067978 A | 30/05/2000 |
| WO | 2004044490 | A1 | 27/05/2004 | BR | 0215546 A | 28/12/2004 |
| | | | | HK | 1059185 A | 00/00/0000 |
| US | 20040195399 | A1 | 07/10/2004 | CA | 2453007 A | 17/06/2004 |
| | | | | EP | 1431658 A | 23/06/2004 |
| | | | | FR | 2848642 A | 18/06/2004 |